

## **Cold Plate with Vortex Generator**

### **Abstract**

The present invention discloses a cold plate with vortex generator for fluid going through defined an inlet and an outlet according to the flowing  
5 directions of the fluid, comprising: a base having a groove, one end of the groove is connected to the inlet and another end is connected to the outlet; a body installed on the base; at least one vortex generator mounted on a surface of the body toward the groove of the base, wherein two unparallel and symmetrical ribs form the vortex generator, one end of the unparallel  
10 ribs is a contraction end with a shorter gap, another end is an expansion end with a longer gap, coolant can pass through the gap between the ribs, due to each rib having a sharp portion, an appearance of the rib is a triangle geometric figure. The vortexes increase the liquid mixture and improve the heat transfer on the cold plate, but not cause much pressure drop, therefore  
15 the heat transfer of the entire system is more efficient.